

**Table G-2**  
**Distance Measurement Verification for Main Antenna Closed Configuration (Handset)**

Mechanism(s)	Test Condition	Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Grip - Closed	Body - Back Side	Mid	10	14	8
Grip - Closed	Body - Back Side	High	10	14	8
Grip - Closed	Body - Bottom Edge	Mid	12	16	12
Grip - Closed	Body - Bottom Edge	High	12	16	12

\*Note: Mid band refers to: GSM1900, UMTS B2/4, LTE B2/4/25/66;  
High band refers to: LTE B7, LTE B41 PC3, LTE B30/38.

**Table G-3**  
**Distance Measurement Verification for Main Antenna Open Configuration (Mini-Tablet)**

Mechanism(s)	Test Condition	Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Grip - Open	Body - Back Side	Mid	12	16	9
Grip - Open	Body - Back Side	High	12	16	9
Grip - Open	Body - Front Side	Mid	11	15	9
Grip - Open	Body - Front Side	High	11	15	9
Grip - Open	Body - Bottom Edge	Mid	14	18	14
Grip - Open	Body - Bottom Edge	High	14	18	14

\*Note: Mid band refers to: GSM1900, UMTS B2/4, LTE B2/4/25/66;  
High band refers to: LTE B7, LTE B41 PC3, LTE B30/38.

## G.4 WIFI Verification Summary

**Table G-4**  
**Power Measurement Verification WIFI**

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
		Un-triggered (Max)	Mechanism #1 (Reduced)
1st			
Held-to-Ear	802.11b	19.55	15.26
Held-to-Ear	802.11g	16.38	15.09
Held-to-Ear	802.11n (2.4GHz)	16.01	14.92
Held-to-Ear	802.11a	16.01	12.3
Held-to-Ear	802.11n (5GHz, 20MHz BW)	16.06	12.64
Held-to-Ear	802.11n (5GHz, 40MHz BW)	15.21	12.84
Held-to-Ear	802.11ac (20MHz BW)	16.05	13.12
Held-to-Ear	802.11ac (40MHz BW)	15.02	12.57
Held-to-Ear	802.11ac (80MHz BW)	14.15	12.71

\*Note: 802.11ax and MIMO WIFI modes were not evaluated due to equipment limitations.

**Table G-5**  
**Distance Measurement Verification for WIFI**

Mechanism(s)	Test Condition	Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Held-to-Ear	Head - Right Cheek	2.4GHz	57	72	50
Held-to-Ear	Head - Right Cheek	5GHz	53	73	50
Held-to-Ear	Head - Left Cheek	2.4GHz	58	72	50
Held-to-Ear	Head - Left Cheek	5GHz	58	72	50

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## 1.2 LTE Downlink Only Carrier Aggregation Test Selection and Setup

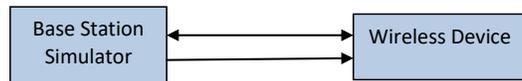
SAR test exclusion for LTE downlink Carrier Aggregation is determined by power measurements according to the number component carriers (CCs) supported by the product implementation. For those configurations required by April 2018 TCBC Workshop Notes, conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive among the channel bandwidth, modulation, and RB combinations in each frequency band.

This device supports LAA with downlink carrier aggregation only. It uses carrier aggregation in the downlink to combine LTE in the unlicensed spectrum (i.e. LTE Band 46) with LTE in the licensed band (served as PCC). All uplink communications and acknowledgements on the PCC remain identical to specifications when downlink carrier aggregation is inactive.

Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the maximum average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive. All bands required for SAR testing per FCC KDB procedures were considered. Based on the measured maximum powers below, no additional SAR tests were required for DLCA SAR configurations.

### General PCC and SCC configuration selection procedure

- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)ii) of KDB 941225 D05 V01r02. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
- To maximize aggregated bandwidth, highest channel bandwidth available for that CA combination was selected for SCC. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
- All selected PCC and SCC(s) remained fully within the uplink/downlink transmission band of the respective component carrier.



**Figure 1**  
**DL CA Power Measurement Setup**

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<b>Test Dates:</b> 2/11/19 - 3/10/19	<b>DUT Type:</b> Portable Handset	APPENDIX H: Page 2 of 4		

# 1.3 Downlink Carrier Aggregation RF Conducted Powers

## 1.3.1 LTE Band 12 as PCC

Table 1  
Maximum Output Powers

Combination	PCC								SCC 1				SCC 2				Power		
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B2	20	900	1960	-	-	-	-	24.52	24.50
CA 4A-12A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	24.52	24.50
CA 4A-12A (2)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	-	-	-	-	24.52	24.50
CA 12A-66A (1)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	24.54	24.50
CA 12A-66A (2)	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B66	20	66786	2145	-	-	-	-	24.54	24.50
CA 4A-4A-12A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B4	20	2175	2132.5	LTE B4	10	2350	2150	24.58	24.50
CA 12A-66A-66A	LTE B12	5	23095	707.5	QPSK	1	12	5095	737.5	LTE B66	20	66786	2145	LTE B66	20	67236	2190	24.54	24.50

## 1.3.2 LTE Band 13 as PCC

Table 2  
Maximum Output Powers

Combination	PCC								SCC 1				SCC 2				Power		
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 2A-4A-13A	LTE B13	10	23230	782	QPSK	1	40	5230	751	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	23.87	24.02

## 1.3.3 LTE Band 5 as PCC

Table 3  
Maximum Output Powers

Combination	PCC								SCC 1				SCC 2				Power		
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA 5A-7A	LTE B5	5	20625	846.5	QPSK	1	12	2625	891.5	LTE B7	20	3100	2655	-	-	-	-	24.45	24.45
CA 5A-41A	LTE B5	5	20625	846.5	QPSK	1	12	2625	891.5	LTE B41	20	40620	2593	-	-	-	-	24.64	24.45
CA 2A-4A-5A	LTE B5	5	20625	846.5	QPSK	1	12	2625	891.5	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	24.68	24.45
CA 5A-7A-7A	LTE B5	5	20625	846.5	QPSK	1	12	2625	891.5	LTE B7	20	3100	2655	LTE B7	20	2850	2630	24.67	24.45
CA 5A-7C	LTE B5	5	20625	846.5	QPSK	1	12	2625	891.5	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	24.66	24.45

## 1.3.4 LTE Band 66 as PCC

Table 4  
Maximum Output Powers

Combination	PCC								SCC 1				SCC 2				SCC 3				Power			
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 2A-66A	LTE B66	15	132597	1772.5	QPSK	1	0	67061	2172.5	LTE B2	20	900	1960	-	-	-	-	-	-	-	-	-	24.38	24.45
CA 12A-66A (1)	LTE B66	15	132597	1772.5	QPSK	1	0	67061	2172.5	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	-	24.33	24.45
CA 12A-66A (2)	LTE B66	15	132597	1772.5	QPSK	1	0	67061	2172.5	LTE B12	10	5095	737.5	-	-	-	-	-	-	-	-	-	24.33	24.45
CA 66B	LTE B66	15	132597	1772.5	QPSK	1	0	67061	2172.5	LTE B66	5	66958	2163.2	-	-	-	-	-	-	-	-	-	24.38	24.45
CA 66C	LTE B66	15	132597	1772.5	QPSK	1	0	67061	2172.5	LTE B66	20	66958	2155.4	-	-	-	-	-	-	-	-	-	24.38	24.45
CA 7A-66A-66A	LTE B66	15	132597	1772.5	QPSK	1	0	67061	2172.5	LTE B66	20	66358	2120	LTE B7	20	3100	2655	-	-	-	-	-	24.65	24.45
CA 12A-66A-66A	LTE B66	15	132597	1772.5	QPSK	1	0	67061	2172.5	LTE B66	20	66358	2120	LTE B12	10	5095	737.5	-	-	-	-	-	24.33	24.45
CA 7C-66A-66A	LTE B66	15	132597	1772.5	QPSK	1	0	67061	2172.5	LTE B66	20	66358	2120	LTE B7	20	3100	2655	LTE B7	20	2902	2635.2	24.68	24.45	

## 1.3.5 LTE Band 7 as PCC

Table 5  
Maximum Output Powers

Combination	PCC								SCC 1				SCC 2				SCC 3				Power			
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)	
CA 5A-7A	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B5	10	2525	881.5	-	-	-	-	-	-	-	-	-	24.12	24.17
CA 7A-7A (1)	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B7	20	3350	2680	-	-	-	-	-	-	-	-	-	0.00	24.17
CA 2A-4A-7A	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B2	20	900	1960	LTE B4	20	2175	2132.5	-	-	-	-	-	24.13	24.17
CA 2A-7A-7A	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B7	20	3350	2680	LTE B2	20	900	1960	-	-	-	-	-	0.00	24.17
CA 2A-7C	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B7	20	3048	2619.8	LTE B2	20	900	1960	-	-	-	-	-	24.05	24.17
CA 4A-7C	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B7	20	3048	2619.8	LTE B4	20	2175	2132.5	-	-	-	-	-	24.10	24.17
CA 5A-7A-7A	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B7	20	3350	2680	LTE B5	10	2525	881.5	-	-	-	-	-	24.14	24.17
CA 5A-7C	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B7	20	3048	2619.8	LTE B5	10	2525	881.5	-	-	-	-	-	24.07	24.17
CA 7A-66A-66A	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B66	20	66786	2145	LTE B66	20	67236	2190	-	-	-	-	-	24.00	24.17
CA 7C-66A-66A	LTE B7	20	20850	2510	QPSK	1	99	2850	2630	LTE B7	20	3048	2619.8	LTE B66	20	66786	2145	LTE B66	20	67236	2190	23.98	24.17	

## 1.3.6 LTE Band 41 as PCC

Table 6  
Maximum Output Powers

Combination	PCC								SCC 1				SCC 2				SCC 3				Power				
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (UL) Freq. [MHz]	Mod.	PCC UL RB	PCC UL RB Offset	PCC (DL) Channel	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	LTE Tx Power with DL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)		
CA 41A-41A (1)	LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	20	39750	2506	-	-	-	-	-	-	-	-	-	24.33	24.35	
CA 41A-41C	LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	20	39848	2528.8	LTE B41	20	39750	2506	-	-	-	-	-	-	24.32	24.35
CA 41C-41A	LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	20	40857	2616.7	LTE B41	20	39750	2506	-	-	-	-	-	-	24.29	24.35
CA 41C-41C	LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	20	40857	2616.7	LTE B41	20	39848	2525.8	LTE B41	20	39750	2506	-	-	24.33	24.35
CA 41A-41D	LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	20	40148	2545.6	LTE B41	20	39848	2525.8	LTE B41	20	39750	2506	-	-	24.29	24.35
CA 41D-41A	LTE B41	20	41055	2636.5	QPSK	1	0	41055	2636.5	LTE B41	20	40857	2616.7	LTE B41	20	40659	2596.9	LTE B41	20	39750	2506	-	-	24.27	24.35

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## 1.4 Downlink Carrier Aggregation with Uplink Carrier Aggregation enabled

This device supports uplink carrier aggregation (ULCA) with additional Carrier Aggregation configurations active in the downlink. Power measurements were performed with ULCA active and additional CA configurations active in the downlink for the configuration per Fall 2017 TCB Workshop Notes.

Per FCC Guidance, additional SAR measurements for these configurations were not required since their maximum output power was not more than 0.25 dB higher than the maximum output power for with only ULCA active.

### 1.4.1 DL Carrier Aggregation RF Conducted Powers

Table 7  
LTE Band 7 Maximum Output Powers

Combination	PCC										SCC 1				SCC 2				SCC 3				Power					
	PCC Band	PCC BW [MHz]	PCC (UL) Ch.	PCC (DL) Freq. [MHz]	Modulation	PCC UL RB	PCC UL RB Offset	PCC (DL) Ch.	PCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC UL Ch.	SCC UL Freq. [MHz]	Modulation	SCC UL RB	SCC UL RB Offset	SCC DL Ch.	SCC DL Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Ch.	SCC (DL) Freq. [MHz]	SCC Band	SCC BW [MHz]	SCC (DL) Channel	SCC (DL) Freq. [MHz]	ULCA Tx. Power with all CA config. active in DL (dBm)	ULCA Tx. Power (dBm)
CA 2A/7C	LTE B7	20	21350	2560	QPSK	1	0	3350	2680	LTE B7	20	21152	2540.2	QPSK	1	89	3152	2680.2	LTE B2	20	900	1960	-	-	-	-	24.05	23.90
CA 4A/7C	LTE B7	20	21350	2560	QPSK	1	0	3350	2680	LTE B7	20	21152	2540.2	QPSK	1	89	3152	2680.2	LTE B4	20	2175	2132.5	-	-	-	-	24.09	23.90
CA 5A/7C	LTE B7	20	21350	2560	QPSK	1	0	3350	2680	LTE B7	20	21152	2540.2	QPSK	1	89	3152	2680.2	LTE B8	10	2525	881.5	-	-	-	-	24.07	23.90
CA 7C-56A-65A	LTE B7	20	21350	2560	QPSK	1	0	3350	2680	LTE B7	20	21152	2540.2	QPSK	1	89	3152	2680.2	LTE B6	20	80785	2145	LTE B6	20	67235	2150	23.95	23.90

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# APPENDIX I: IEEE 802.11AX RU SAR EXCLUSION

## 1.1 IEEE 802.11ax RU SAR Exclusion

To make the most efficient use of the additional available subcarriers (data tones), IEEE 802.11ax can utilize Orthogonal Frequency-Division Multiple Access (OFDMA) which divides the existing 802.11 channels into smaller subchannels called Resource Units (RUs). Possible RU sizes are: 26T, 52T, 106T, 242T, 484T and 996T.

Per FCC Guidance, 802.11ax was considered a higher order 802.11 mode when compared to a/b/g/n/ac to apply KDB Publication 248227 D01v02r02 for OFDM mode selection. Therefore, SAR tests were not required for 802.11ax based on the maximum allowed output powers of OFDM modes and the reported SAR values. Per FCC Guidance, maximum conducted powers were performed for each RU size to demonstrate that the output powers would not be higher than the other OFDM 802.11 modes.

## 1.2 IEEE 802.11ax RU Target Powers

### 1.2.1 Maximum 802.11ax RU WLAN Output Power

Tones	SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm				
	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	
	Ch & RU index												
26T	13	10	10	10	13	10	10	10	13	10	10	10	
	Ch 13: -4				Ch 13: 3.5				Ch 12: 9 Ch 13: 2				
52T	14	12	11	10	14	12	11	10	14	12	11	10	
	Ch 13: -2.5				Ch 13: 5.0				Ch 12: 10.5 Ch 13: 4				
106T	15	14	12	11	15	14	12	11	15	14	12	11	
	Ch 13: 1.5				Ch 13: 8.5				Ch 12: 13 Ch 13: 7				
242T	16	15	13	12	16	15	13	12	16	15	13	12	
	Ch 1: 10.5 Ch 2: 13.0 Ch 3: 15.0 Ch 10: 14.0 Ch 11: 11.0 Ch 12: 10.5 Ch 13: 5.0				Ch 11: 15.0 Ch 12: 12.5 Ch 13: 12.5				Ch 1: 14.5 Ch 11: 14.5 Ch 12: 12.5 Ch 13: 12.5				
484T			13 Ch 38: 12.0 Ch 102: 12.5	12				13	12			13	12
996T				12 Ch 42: 11.0					12				12

(Upper tolerance: target +1.0dB)

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## 1.2.2 Reduced 802.11ax RU WLAN Output Power

Tones	SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
	Ch & RU index											
26T	13	10	10	10	13	10	10	10	13	10	10	10
	Ch 13: -4				Ch 13: 3.5				Ch 12: 9 Ch 13: 2			
52T	14	12	11	10	14	12	11	10	14	12	11	10
	Ch 13: -2.5				Ch 13: 5.0				Ch 12: 10.5 Ch 13: 4			
106T	15	13	12	11	15	13	12	11	15	14	12	11
	Ch 13: 1.5				Ch 13: 8.5				Ch 12: 13 Ch 13: 7			
242T	16	13	13	12	16	13	13	12	16	15	13	12
	Ch 1: 10.5 Ch 2: 13.0 Ch 3: 15.0 Ch 10: 14.0 Ch 11: 11.0 Ch 12: 10.5 Ch 13: 5.0				Ch 11: 15.0 Ch 12: 12.5 Ch 13: 12.5				Ch 1: 14.5 Ch 11: 14.5 Ch 12: 12.5 Ch 13: 12.5			
484T			13 Ch 38: 12.0 Ch 102: 12.5	12			13	12			13	12
996T				12 Ch 42: 11.0				12				12

(Upper tolerance: target +1.0dB)

## 1.2.3 Maximum 802.11ax RU WLAN Output Power During Conditions with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN

Tones	SISO (ANT1) /in dBm				SISO (ANT2) /in dBm				MIMO (ALL) /in dBm			
	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
	Ch & RU index											
26T	13	10	10	10	13	10	10	10	13	10	10	10
	Ch 13: -4				Ch 13: 3.5				Ch 12: 9 Ch 13: 2			
52T	14	12	11	10	14	12	11	10	14	12	11	10
	Ch 13: -2.5				Ch 13: 5.0				Ch 12: 10.5 Ch 13: 4			
106T	15	13	12	11	15	13	12	11	15	14	12	11
	Ch 13: 1.5				Ch 13: 8.5				Ch 12: 13 Ch 13: 7			
242T	16	13	13	12	16	13	13	12	16	15	13	12
	Ch 1: 10.5 Ch 2: 13.0 Ch 3: 15.0 Ch 10: 14.0 Ch 11: 11.0 Ch 12: 10.5 Ch 13: 5.0				Ch 11: 15.0 Ch 12: 12.5 Ch 13: 12.5				Ch 1: 14.5 Ch 11: 14.5 Ch 12: 12.5 Ch 13: 12.5			
484T			13 Ch 38: 12.0 Ch 102: 12.5	12			13	12			13	12
996T				12 Ch 42: 11.0				12				12

(Upper tolerance: target +1.0dB)

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## 1.2.4 Reduced 802.11ax RU WLAN Output Power During Conditions with Simultaneous 2.4 GHz WLAN and 5 GHz WLAN

Tones	SISO (ANT1) /in dBm				SISO (ANT2) /in dBm			MIMO (ALL) /in dBm				
	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz	2.4G	5G/20Mhz	5G/40Mhz	5G/80Mhz
Ch & RU index												
26T	13	10	10	10	13	10	10	10	13	10	10	10
	Ch 13: -4				Ch 13: 3.5				Ch 12: 9 Ch 13: 2			
52T	13	12	11	10	13	12	11	10	14	12	11	10
	Ch 13: -2.5				Ch 13: 5.0				Ch 12: 10.5 Ch 13: 4			
106T	13	13	12	11	13	13	12	11	15	14	12	11
	Ch 13: 1.5				Ch 13: 8.5				Ch 12: 13 Ch 13: 7			
242T	13	13	13	12	13	13	13	12	16	15	13	12
	Ch 1: 10.5 Ch 11: 11.0 Ch 12: 10.5 Ch 13: 5.0				Ch 12: 12.5 Ch 13: 12.5				Ch 1: 14.5 Ch 11: 14.5 Ch 12: 12.5 Ch 13: 12.5			
484T			13 Ch 38: 12.0 Ch 102: 12.5	12			13	12			13	12
996T				12 Ch 42: 11.0				12				12

(Upper tolerance: target +1.0dB)

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### 1.3 IEEE 802.11ax Measured Powers

**Table 1**  
**Maximum 2.4 GHz 802.11ax RU Output Power – Ant 1**

RU Index	Tonnes	Ch. 1	Ch. 2	Ch. 3	Ch. 6	Ch. 10	Ch. 11	Ch. 12	Ch. 13
		Average							
0	26	13.97	13.54	13.37	13.65	13.58	13.92	13.34	-3.75
4	26	13.56	13.52	13.96	13.71	13.65	13.97	13.91	-3.35
8	26	13.63	13.60	13.51	13.99	13.74	13.99	13.38	-3.10
37	52	14.9	14.87	14.67	14.83	14.73	14.61	14.93	-1.76
38	52	14.92	14.91	14.38	14.89	14.70	14.53	14.71	-1.56
40	52	14.72	14.59	14.41	14.97	14.54	14.59	14.23	-1.64
53	106	15.79	15.38	15.41	15.72	15.20	15.98	15.40	2.31
54	106	15.64	15.38	15.92	15.87	15.91	15.90	15.54	2.09
61	242	11.46	13.51	15.85	16.58	14.89	11.95	11.37	5.73

**Table 2**  
**Maximum 2.4 GHz 802.11ax RU Output Power – Ant 2**

RU Index	Tonnes	Ch. 1	Ch. 6	Ch. 11	Ch. 12	Ch. 13
		Average	Average	Average	Average	Average
0	26	13.73	13.97	13.78	13.70	4.41
4	26	13.64	13.79	13.97	13.98	4.22
8	26	13.98	13.78	13.91	13.52	4.23
37	52	14.91	14.75	14.91	14.83	5.92
38	52	14.93	14.89	14.63	14.74	5.98
40	52	14.79	14.98	14.76	14.80	5.52
53	106	15.95	15.89	15.98	15.91	9.46
54	106	15.97	15.77	15.92	15.88	9.02
61	242	15.49	16.91	15.99	13.24	13.16

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**Table 3**  
**Maximum 5 GHz 802.11ax RU Output Power – Ant 1**

5GHz - 20MHz													
RU Index	Tonnes	UNII 1			UNII 2A			UNII 2C			UNII 3		
		Ch. 36	Ch. 40	Ch. 48	Ch. 52	Ch. 56	Ch. 64	Ch. 100	Ch. 120	Ch. 144	Ch. 149	Ch. 157	Ch. 165
		Average											
0	26	10.81	10.91	10.97	10.76	10.83	10.99	10.72	10.86	10.75	10.81	10.56	10.98
4	26	10.99	10.98	10.83	10.97	10.57	10.67	10.80	10.89	10.90	10.77	10.94	10.74
8	26	10.91	10.93	10.95	10.74	10.76	10.91	10.97	10.98	10.98	10.98	10.99	10.97
37	52	12.90	12.98	12.76	12.75	12.87	12.93	12.89	12.99	12.97	12.81	12.74	12.95
38	52	12.61	12.73	12.93	12.92	12.96	12.98	12.72	12.63	12.74	12.87	12.92	12.98
40	52	12.98	12.99	12.79	12.79	12.90	12.89	12.77	12.95	12.95	12.92	12.98	12.87
53	106	14.60	14.67	14.77	14.76	14.84	14.93	14.97	14.86	14.84	14.69	14.94	14.89
54	106	14.67	14.70	14.80	14.78	14.79	14.80	14.88	14.78	14.73	14.98	14.97	14.86
61	242	15.95	15.65	15.75	15.98	15.67	15.65	15.67	15.98	15.98	15.89	15.87	15.64

5GHz - 40MHz										
RU Index	Tonnes	UNII 1		UNII 2A		UNII 2C		UNII 3		
		Ch. 38	Ch. 46	Ch. 54	Ch. 62	Ch. 102	Ch. 118	Ch. 142	Ch. 151	Ch. 159
		Average								
0	26	10.77	10.81	10.62	10.71	10.97	10.95	10.99	10.80	10.65
8	26	10.93	10.99	10.61	10.75	10.91	10.89	10.64	10.60	10.65
17	26	10.81	10.90	10.55	10.97	10.98	10.92	10.98	10.85	10.66
37	52	11.98	11.66	11.86	11.83	11.72	11.71	11.81	11.98	11.50
40	52	11.93	11.97	11.65	11.77	11.98	11.94	11.61	11.80	11.67
44	52	11.99	11.68	11.74	11.72	11.65	11.98	11.76	11.90	11.99
53	106	12.89	12.99	12.59	12.98	12.74	12.91	12.96	12.80	12.70
54	106	12.95	12.56	12.63	12.67	12.88	12.80	12.98	12.72	12.62
56	106	12.84	12.96	12.98	12.96	12.76	12.86	12.95	12.75	12.93
61	242	13.95	13.75	13.76	13.81	13.97	13.98	13.98	13.81	13.98
62	242	13.99	13.66	13.65	13.70	13.94	13.97	13.99	13.91	13.61
65	484	12.63	13.98	13.55	13.97	13.23	13.74	13.92	13.60	13.89

5GHz - 80MHz							
RU Index	Tonnes	UNII 1	UNII 2A	UNII 2C		UNII 3	
		Ch. 42	Ch. 58	Ch. 106	Ch. 122	Ch. 138	Ch. 155
		Average	Average	Average	Average	Average	Average
0	26	10.87	10.51	10.75	10.97	10.98	10.90
17	26	10.83	10.99	10.72	10.75	10.96	10.94
36	26	10.91	10.98	10.56	10.60	10.52	10.80
37	52	10.97	10.45	10.72	10.70	10.75	10.98
44	52	10.98	10.94	10.79	10.77	10.99	10.95
52	52	10.60	10.98	10.76	10.99	10.83	10.92
53	106	11.76	11.63	11.72	11.70	11.80	11.70
56	106	11.96	11.95	11.77	11.85	11.99	11.99
60	106	11.82	11.65	11.80	11.60	11.98	11.57
61	242	12.93	12.94	12.72	12.81	12.99	12.94
62	242	12.99	12.54	12.88	12.95	12.98	12.91
64	242	12.98	12.92	12.99	12.91	12.71	12.87
65	484	12.70	12.72	12.95	12.72	12.80	12.98
66	484	12.90	12.86	12.92	12.75	12.93	12.99
67	996	11.65	12.79	12.98	12.83	12.92	12.50

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**Table 4**  
**Maximum 5 GHz 802.11ax RU Output Power – Ant 2**

5GHz - 20MHz													
RU Index	Tonnes	UNII 1			UNII 2A			UNII 2C			UNII 3		
		Ch. 36	Ch. 40	Ch. 48	Ch. 52	Ch. 56	Ch. 64	Ch. 100	Ch. 120	Ch. 144	Ch. 149	Ch. 157	Ch. 165
		Average											
0	26	10.84	10.77	10.85	10.99	10.99	10.81	10.94	10.89	10.99	10.97	10.89	10.78
4	26	10.95	10.98	10.99	10.76	10.78	10.96	10.98	10.99	10.44	10.99	10.68	10.51
8	26	10.63	10.70	10.80	10.91	10.91	10.79	10.66	10.53	10.75	10.96	10.75	10.82
37	52	12.85	12.81	12.90	12.97	12.99	12.85	12.96	12.99	12.99	12.54	12.76	12.73
38	52	12.99	12.99	12.93	12.72	12.74	12.92	12.62	12.55	12.98	12.75	12.91	12.91
40	52	12.75	12.82	12.72	12.50	12.98	12.71	12.67	12.63	12.81	12.91	12.55	12.63
53	106	14.82	14.87	14.80	14.61	14.97	14.83	14.96	14.93	14.97	14.99	14.93	14.99
54	106	14.73	14.79	14.73	14.46	14.98	14.82	14.87	14.75	14.80	14.91	14.99	14.99
61	242	15.85	15.88	15.83	15.52	15.62	15.88	15.99	15.94	15.85	15.99	15.99	15.97

5GHz - 40MHz										
RU Index	Tonnes	UNII 1		UNII 2A		UNII 2C		UNII 3		
		Ch. 38	Ch. 46	Ch. 54	Ch. 62	Ch. 102	Ch. 118	Ch. 142	Ch. 151	Ch. 159
		Average								
0	26	10.72	10.79	10.98	10.65	10.98	10.96	10.80	10.88	10.80
8	26	10.80	10.83	10.95	10.96	10.61	10.67	10.99	10.99	10.55
17	26	10.99	10.70	10.99	10.96	10.87	10.83	10.96	10.81	10.69
37	52	11.99	11.90	11.60	11.86	11.50	11.75	11.86	11.96	11.99
40	52	11.98	11.78	11.98	11.98	11.74	11.84	11.99	11.73	11.72
44	52	11.92	11.96	11.62	11.62	11.54	11.60	11.72	11.85	11.96
53	106	12.75	12.78	12.98	12.50	12.89	12.99	12.67	12.98	12.73
54	106	12.86	12.80	12.97	12.99	12.80	12.88	12.98	12.99	12.99
56	106	12.76	12.67	12.93	12.97	12.99	12.98	12.98	12.87	12.71
61	242	13.94	13.90	13.72	13.82	13.99	13.62	13.87	13.87	13.67
62	242	13.62	13.84	13.70	13.66	13.68	13.73	13.82	13.99	13.78
65	484	13.85	13.92	13.68	13.72	13.95	13.99	13.70	13.99	13.99

5GHz - 80MHz							
RU Index	Tonnes	UNII 1	UNII 2A	UNII 2C		UNII 3	
		Ch. 42	Ch. 58	Ch. 106	Ch. 122	Ch. 138	Ch. 155
		Average	Average	Average	Average	Average	Average
0	26	10.81	10.91	10.92	10.99	10.85	10.78
17	26	10.65	10.96	10.63	10.81	10.89	10.97
36	26	10.66	10.91	10.96	10.73	10.82	10.71
37	52	10.99	10.65	10.60	10.85	10.95	10.90
44	52	10.75	10.98	10.87	10.90	10.99	10.66
52	52	10.87	10.67	10.62	10.99	10.57	10.73
53	106	11.71	11.71	11.67	11.78	11.99	11.94
56	106	11.91	11.99	11.94	11.99	11.97	11.70
60	106	11.46	11.70	11.72	11.78	11.71	11.91
61	242	12.93	12.95	12.99	12.99	12.79	12.99
62	242	12.99	12.79	12.98	12.62	12.72	12.99
64	242	12.91	12.67	12.63	12.52	12.61	12.82
65	484	12.73	12.91	12.80	12.95	12.93	12.99
66	484	12.87	12.98	12.98	12.99	12.99	12.66
67	996	12.71	12.53	12.93	12.93	12.97	12.99

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